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1 Purpose

This information document provides general information relating to the coordination of energization, commissioning, ancillary services testing and operational testing activities.

2 Related Documents

Legal owners are encouraged to review the following related authoritative documents:

- (1) Section 504.3 of the ISO rules, *Coordinating Energization and Commissioning, and Ancillary Services Testing*. Section 504.3 sets out the requirements for coordinating energization, commissioning and ancillary services testing for legal owners of transmission facilities or load facilities. The AESO wishes to point out that section 504.3 does not set out any specific tests that must be performed. Section 504.3 focuses only on the need to coordinate energization commissioning and ancillary services testing with the AESO.
- (2) Section 504.4 of the ISO rules, *Coordinating Operational Testing*. Section 504.4 sets out the requirements for coordinating operational testing activities. The AESO wishes to point out that section 504.4 does not set out any specific tests that must be performed. Section 505.4 focuses only on the need to coordinate operational testing activities with the AESO.
- (3) The AESO also contracts for ancillary services and the technical requirements for ancillary services are set out in an *Ancillary Services Technical Requirements* document that is available on the AESO website. A legal owner conducting any testing with respect to those requirements is required to coordinate those tests in accordance with the requirements set out in section 504.3.
- (4) AESO Processes
 - a. The AESO's [connection process](#) which sets out the process and procedures for connecting facilities to the system.
 - b. The AESO's [behind-the-fence process](#) which sets out the process and procedures for facilities that are behind the fence but connected to the system.
 - c. The AESO's system projects process¹.

For purposes of this information document, the three (3) processes described above are referred to as "AESO processes".

3 What Kinds of Tests Can a Legal owner Perform?

A legal owner can perform any tests it determines necessary. However, the testing should be coordinated with the AESO so that the AESO can maintain reliable operations of the interconnected

¹ The AESO is presently updating the AESO system project process and will provide a link once the process has been updated.

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electric system while the tests are being performed. Section 6 below provides examples of the types of tests that a legal owner needs to coordinate with the AESO.

4 Does the AESO Specify Any Tests?

Yes, the AESO specifies certain tests. The only tests the AESO specifies are those tests relating to ancillary services demonstrating the capability of providing ancillary services. As mentioned above, ancillary services tests are set out in the *Ancillary Services Technical Requirements* document.

5 What Tests Need to be Coordinated with the AESO?

When assessing if a test needs to be coordinated with the AESO, consider whether the test is being performed on:

- (a) energized transmission facilities; or
- (b) commissioning new transmission facilities; or
- (c) commissioning large loads of sufficient size to cause operational concerns (particularly, motor starting that might cause significant voltage depressions).

Following are examples of tests that a legal owner needs to coordinate with the AESO. These examples are intended to provide guidance. The examples are not intended to provide a complete listing of tests that a legal owner needs to coordinate with the AESO.

- (a) commissioning a new transmission breaker (date and time);
- (b) commissioning a new transformer (date and time);
- (c) commissioning a new capacitor bank (date and time);
- (d) commissioning or testing motor starting (e.g. variable frequency drives) where the motor size has been identified to cause operational concerns (date and time, test details);
- (e) commissioning or testing a static VAR compensator (date and time, test details); and
- (f) commissioning or testing a phase shifting transformer (date and time, test details).

6 Commissioning Plans

The commissioning plan, sometimes referred to as the testing plan, or in the case of operational testing an operational test plan, is the generic term used in this information document, to represent a plan a legal owner prepares setting out its testing activities whether those testing activities are commissioning, WECC testing, ancillary services testing or operational testing. The commissioning plan should describe the activities in enough detail such that the AESO can assess these tests and possible impacts on system reliability.

7 Submission and Approval of the Commissioning Plan

Section 504.3

As described in the AESO's processes, for transmission system connections relating to new or modified transmission or load facilities, a legal owner submits the preliminary commissioning plan to the AESO Transmission Project Delivery Project Manager leading the specific project. The AESO's processes set out the timeframes for submitting the preliminary commissioning plans. The AESO reviews this preliminary commissioning plan to determine changes that may be required.

As described in the AESO's processes, a legal owner submits a final commissioning plan to the AESO Operations Coordination group for approval. Subsection 4 of section 504.3 requires that:

Each of the legal owner of a transmission facility and the legal owner of a transmission-connected load facility must provide final, written commissioning or testing plans to the ISO:

- (a) which the ISO approves as being able to be implemented without impacting the reliable operation of the interconnected electric system;
- (b) detailing the types of tests the legal owner proposes to conduct;

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- (c) in sufficient time to allow the ISO to approve the plans a minimum of thirty (30) days prior to commissioning; and
- (d) containing the minimum detail as noted in subsection 5 and 6, as appropriate.

In order to have the approved plan in place thirty (30) days prior to commissioning, the a legal owner needs to submit the plan to the AESO ahead of the thirty (30) days to allow the AESO sufficient time for review and approval. The amount of lead time necessary to review and approve a commissioning plan depends on many factors including:

- (1) the number and complexity of the tests the legal owner wishes to perform;
- (2) the number of other test plans submitted to the AESO by other legal owners, which also need to be reviewed and approved;
- (3) the number of planned and unplanned outages that may be occurring during the same time period for which commissioning plans are submitted for review and approval; and
- (4) the number and magnitude of reliability issues that the AESO may be dealing with in the same time period that commissioning plans are submitted for review and approval.

As a general guideline and consistent with AESO processes, the AESO suggests that legal owner submit a commissioning plan at least sixty (60) days in advance of the testing to allow the AESO time to review and approve the plan (30) days prior to commencing any of the tests. The lead time for the submission of plans can vary based on the volume and nature of the tests and to provide flexibility a specific lead time is not set out in ISO rules 504.3. As such, legal owners are encouraged to work with the assigned AESO project manager to ensure that the commissioning plans are submitted in timely manner to facilitate having an approved plan in place 30) days prior to commencing any of the tests.

Following is the submission information for commissioning plans relating to section 504.3:

- (a) a preliminary commissioning plan for a project administered through the AESO's processes is submitted to the AESO Project Manager leading the project;
- (b) a final commissioning plan for a project administered through the AESO's processes is submitted to the AESO's Operations Coordination group at ops.coordination@aeso.ca; and
- (c) a final commissioning plan for WECC testing and ancillary testing is submitted to the AESO's Operations Coordination group at ops.coordination@aeso.ca.

Section 504.4

Section 504.4 focuses on any testing a legal owner may wish to perform after energization and commission are complete. Subsection 2 section 504.4 requires that:

The legal owner of a transmission facility and the legal owner of a transmission-connected load facility that provides final, operational testing plans to the ISO under subsection 3(1) must ensure that:

- (a) the ISO approves such plans as being able to be implemented without impacting the reliable operation of the interconnected electric system; and
- (e) the legal owner provides such plans in sufficient time to allow the ISO to approve the plans a minimum of fifteen (15) days prior to the desired testing date.

Again, if an approved plan needs to be in place fifteen (15) days prior to commencing any tests, it is prudent for a legal owner to submit the plan ahead of the fifteen (15) days to allow the AESO sufficient time for to review and approve the plan. As a general guideline, the AESO suggests that a legal owner submit commissioning plans for operational tests at least thirty (30) days in advance of the planned testing to allow time for the AESO to review and approve the plan. Also, when a legal owner knows that a specific operational test occurs at very regular points in time (valve testing, for example), the AESO will accept a single (e.g. semi-annual), submission listing the requested dates for such testing. The legal owner will have to submit any changes to the dates in the grouped submission as appropriate for the AESO to be able to approve the revised dates fifteen (15) days in advance of testing.

Furthermore, the AESO wishes to point out that section 504.4 does accommodate testing of a more

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urgent nature to recover from unexpected operating problems. Legal owners are encouraged to read subsection 3(4) of section 504.4 to understand the specific requirements related to testing of a more urgent nature.

Following is the submission information for commissioning plans relating to section 504.4:

- (1) Commissioning plans related to planned operational testing should be submitted to the AESO's Operations Coordination group ops.coordination@aeso.ca.
- (2) Requests for testing of an urgent nature necessary to recover from unexpected operation problems should be communicated and coordinated with the AESO System Controller directly. Additional assessment and coordination may involve the AESO's Operations Coordination group.

8 Real Time Approval of Testing

In addition to approving commissioning plans as described above, the AESO also provides the legal owner to obtain the AESO's verbal authorization one (1) hour in advance of the testing, as indicated in section 504.3 and section 504.4. The AESO will provide such approval if the real time conditions of the system allow for the specific tests. If, based on the real time system conditions, the system cannot be operated in a safe and reliable manner, then the AESO will work with the legal owner to re-schedule those tests.

9 Information to Include in a Commissioning Plan

Each project differs due to the nature, size and complexity of the project. Therefore, the information contained in a commissioning plan differs. A legal owner's commissioning plan should include enough information such that the AESO can assess the impact those tests may have on the transmission system. Any legal owner that is unsure of what to include in a commissioning plan may contact the AESO Project Manager leading the project or the AESO Operations Coordination group (ops.coordination@aeso.ca) for direction.

Revision History

2012-12-31	Initial Release
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